

# **LOCKING DEVICE FOR A CEILING MOUNTED MOVIE PLAYER**

## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

The present invention relates to locking device, and more particularly to a locking device for a ceiling mounted movie player.

### **2. Description of Related Art**

Ceiling mounted movie players are becoming more and more popular with vehicle owners as they can provide entertainment and fun any time when the passengers feel like relaxing. Therefore, numerous kinds of ceiling mounted movie players have been introduced to the market and each one of them has a different locking structure to fix the movie player onto the ceiling of the vehicle. Normally, the most common way to mount the movie player onto the vehicle ceiling involves only riveting. That is, the frame to hold the movie player is riveted to the vehicle ceiling so that after the movie player is mounted onto the vehicle ceiling, the movie player can not be removed from the vehicle ceiling unless special tools and skills are employed. This is especially troublesome when the movie player malfunctions and has to be removed for repair. To overcome the shortcomings, the present invention tends to provide an improved locking device to mitigate the aforementioned problems.

## **SUMMARY OF THE INVENTION**

The primary objective of the present invention is to provide an improved locking device for a ceiling mounted movie player to facilitate the removal of the movie player from the vehicle ceiling.

1           To accomplish the foregoing objective, the locking device includes a  
2   mounting plate for receiving therein a movie player and a base adapted to be  
3   securely mounted on a vehicle ceiling. The base has multiple pairs of holes  
4   defined along opposite sides of the base and the mounting plate has multiple  
5   pairs of L-shaped legs formed on opposite sides of the mounting plate to  
6   correspond to the multiple pairs of holes of the base so that when the L-shaped  
7   legs are inserted into the holes of the base, movement of the mounting plate  
8   allows the L-shaped legs to securely clamp the base so that the mounting plate is  
9   securely engaged with the base and thus the movie player is secured to the  
10   vehicle ceiling.

11           Because the securing of the mounting plate having therein the movie  
12   player on the base involves only a simple movement of the mounting plate,  
13   assembly and disassembly of the mounting plate is easy.

14           Other objects, advantages and novel features of the invention will  
15   become more apparent from the following detailed description when taken in  
16   conjunction with the accompanying drawings.

#### 17   BRIEF DESCRIPTION OF THE DRAWINGS

18           Fig. 1 is an exploded perspective view of the locking device of the  
19   present invention;

20           Fig. 2 is a bottom plan view of the locking device before initiation of a  
21   locking process between the mounting plate and the base;

22           Fig. 3 is a bottom plan view of the locking device after each of the L-  
23   shaped legs is securely engaged with a periphery of a corresponding one of the

1 holes in the base; and

2 Fig. 4 is a schematic view showing the application of the present  
3 invention to support a ceiling display.

#### 4 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

5 With reference to Fig. 1, the locking device in accordance with the  
6 present invention includes a mounting plate (1) for pivotally receiving therein a  
7 movie player (3) and a base (2) adapted to securely engage with a vehicle ceiling  
8 (4).

9 With reference to Fig. 2, the mounting plate (1) has multiple pairs of L-  
10 shaped legs (11) formed opposite sides of a face of the mounting plate (1) and  
11 first ears (12) respectively formed on a peripheral side face of the mounting plate  
12 (1) and having a first hole (121) defined therethrough. The base (2) has multiple  
13 pairs of holes (21) oppositely defined along a side of the base (2) to correspond  
14 to the L-shaped legs (11) and multiple second ears (22) respectively formed on a  
15 peripheral side face of the base (2) and having a second hole (221) corresponding  
16 to the first hole (121).

17 When the mounting plate (1) is to be engaged with the base (2), the L-  
18 shaped legs (11) are first extended into the holes (21) in the base (2). After the  
19 L-shaped legs (11) are inserted into the corresponding holes (21) of the base (2),  
20 it is noted that the mounting plate (1) is not mated with the base (2) yet. Relative  
21 movement of the mounting plate (1) to the base (2) allows each L-shaped leg (11)  
22 to engage with a periphery defining the corresponding hole (21) in the base (2)  
23 such that the mounting plate (1) is engaged with the base (2).

1           After the relative movement between the mounting plate (1) and the base  
2   (2), the first hole (121) of the first ear (12) of the mounting plate (1)  
3   communicates with the second hole (221) of the second ear (22) of the base (2).  
4   Thereafter screws (5) are employed into the mated first and second holes  
5   (121,221) to securely engage the mounting plate (1) with the base (2) such that  
6   relative position between the mounting plate (1) and the base (2) is secured.

7           With reference to Fig. 4, it is noted that after the locking device of the  
8   present invention is assembled onto the vehicle ceiling (4), the movie player (not  
9   numbered) is able to be lowered to allow a viewer to easily watch a program. It is  
10   to be understood, however, that even though numerous characteristics and  
11   advantages of the present invention have been set forth in the foregoing  
12   description, together with details of the structure and function of the invention,  
13   the disclosure is illustrative only, and changes may be made in detail, especially  
14   in matters of shape, size, and arrangement of parts within the principles of the  
15   invention to the full extent indicated by the broad general meaning of the terms  
16   in which the appended claims are expressed.